

## WHAT IS CLAIMED IS:

- 1           1.     A magnetic head prepared by a process comprising:  
2           dispensing lapping media onto an interface surface of a compliant pad;  
3           engaging the interface surface to the surface of a head outside a region  
4           comprising a magnetic transducer defining a head gap; and  
5           moving the pad over the head in a direction parallel to the head gap while  
6           using a head rail to guide the pad.
- 1           2.     The magnetic head of claim 1 wherein the moving further comprises  
2           oscillating the pad linearly over the head parallel to the head gap.
- 1           3.     The magnetic head of claim 1 wherein the lapping media contains a  
2           combination of chemical and mechanical agents.
- 1           4.     The magnetic head of claim 3 wherein the chemical agents are  
2           etchants that are specifically adjusted to give a desired head profile for the poletips  
3           and shields.
- 1           5.     The magnetic head of claim 4 wherein the etchants are formed by  
2           adding dilute acid to the conventional lapping media used at the interface surface.
- 1           6.     The magnetic head of claim 5 wherein the added etchants selectively  
2           remove iron containing poles and shields to advance the poletips below a  
3           surrounding insulator layer.

1           7.     The magnetic head of claim 3 wherein the magnetic head comprises  
2     an MR element and shields defining an MR read sensor, and wherein the moving of  
3     the compliant pad causes the mechanical and chemical agents to eliminate element  
4     conducting connections smears between the MR element and shields.

1           8.     The magnetic head of claim 1 wherein the compliant pad is relatively  
2     soft conforms to the head rail which serves as a guide resulting in parallel  
3     movement during the lapping.

1           9.     The magnetic head of claim 1 wherein the soft, compliant pad  
2     comprises a fabric mat.

1           10.    A method for performing a finishing lapping process to a magnetic  
2     head, comprising:  
3         dispensing lapping media onto an interface surface of a compliant pad;  
4         engaging the interface surface to the surface of a head outside a region  
5     comprising magnetic transducers defining a head gap; and  
6         moving the pad over the head in a direction parallel to the head gap while  
7     using a head rail to guide the pad.

1           11.    The method of claim 10 wherein the moving further comprises  
2     oscillating the pad linearly over the head parallel to the head gap.

1           12.    The method of claim 10 wherein the lapping media contains a  
2     combination of chemical and mechanical agents.

1           13.    The method of claim 12 wherein the chemical etchants are etchants  
2 specifically adjusted to give a desired head profile for the poletips and shields.

1           14.    The method of claim 13 wherein the etchants are formed by adding  
2 dilute acid to the conventional lapping media used at the interface surface.

1           15.    The method of claim 14 wherein the added etchant selectively  
2 removes iron containing poles and shields to advance the poletips below a  
3 surrounding insulator layer.

1           16.    The method of claim 12 wherein the magnetic head comprises a MR  
2 element and shields defining a MR read sensor, and wherein the moving of the soft,  
3 compliant pad causes the mechanical agents to eliminate element conducting  
4 connections and smears between the MR element and shields.

1           17.    The method of claim 16 wherein the moving further comprises moving  
2 the pad from one end of the head to another and reversing the direction without  
3 stopping on the elements.

1           18.    The method of claim 10 wherein the soft, compliant pad conforms to  
2 the head rail to provide a parallel movement during the moving.

1           19.    The method of claim 10 wherein the soft, compliant pad comprises a  
2 fabric mat.

- 1           20.    The method of claim 10 wherein the fabric mat comprises a cotton  
2   mat.